

\$%^STN;HighlightOn= \*\*\*;HighlightOff=\*\*\* ;

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:ssspta1756mja

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

\*\*\*\*\* Welcome to STN International \*\*\*\*\*

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America  
NEWS 2 "Ask CAS" for self-help around the clock  
NEWS 3 AUG 09 INSPEC enhanced with 1898-1968 archive  
NEWS 4 AUG 28 ADISCTI Reloaded and Enhanced  
NEWS 5 AUG 30 CA(SM)/CAplus(SM) Austrian patent law changes  
NEWS 6 SEP 11 CA/CAplus enhanced with more pre-1907 records  
NEWS 7 SEP 21 CA/CAplus fields enhanced with simultaneous left and right  
truncation  
NEWS 8 SEP 25 CA(SM)/CAplus(SM) display of CA Lexicon enhanced  
NEWS 9 SEP 25 CAS REGISTRY(SM) no longer includes Concord 3D coordinates  
NEWS 10 SEP 25 CAS REGISTRY(SM) updated with amino acid codes for pyrrolysine  
NEWS 11 SEP 28 CEABA-VTB classification code fields reloaded with new  
classification scheme  
NEWS 12 OCT 19 LOGOFF HOLD duration extended to 120 minutes  
NEWS 13 OCT 19 E-mail format enhanced  
NEWS 14 OCT 23 Option to turn off MARPAT highlighting enhancements available  
NEWS 15 OCT 23 CAS Registry Number crossover limit increased to 300,000 in  
multiple databases  
NEWS 16 OCT 23 The Derwent World Patents Index suite of databases on STN  
has been enhanced and reloaded  
  
NEWS EXPRESS JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.  
  
NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS LOGIN Welcome Banner and News Items  
NEWS IPC8 For general information regarding STN implementation of IPC 8  
NEWS X25 X.25 communication option no longer available

Enter NEWS followed by the item number or name to see news on that  
specific topic.

All use of STN is subject to the provisions of the STN Customer  
agreement. Please note that this agreement limits use to scientific  
research. Use for software development or design or implementation  
of commercial gateways or other similar uses is prohibited and may  
result in loss of user privileges and other penalties.

\*\*\*\*\* STN Columbus \*\*\*\*\*

FILE 'HOME' ENTERED AT 13:51:41 ON 24 OCT 2006

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 13:51:54 ON 24 OCT 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2006 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 23 OCT 2006 HIGHEST RN 911100-17-9  
DICTIONARY FILE UPDATES: 23 OCT 2006 HIGHEST RN 911100-17-9

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

```
=> s sb 58-74/mac
      19114 SB/MAC
      209712 58-74/MAC
L1      2437 SB 58-74/MAC
      (SB/MAC (P) 58-74/MAC)
```

```
=> s ge 2-10/mac
      15630 GE/MAC
      535424 2-10/MAC
L2      5054 GE 2-10/MAC
      (GE/MAC (P) 2-10/MAC)
```

```
=> s te 12-25/mac
      11137 TE/MAC
      308494 12-25/MAC
L3      1497 TE 12-25/MAC
      (TE/MAC (P) 12-25/MAC)
```

```
=> s te 10-35/mac
      11137 TE/MAC
      418987 10-35/MAC
L4      2643 TE 10-35/MAC
      (TE/MAC (P) 10-35/MAC)
```

```
=> s l1 and l2 and l4
L5      310 L1 AND L2 AND L4
```

```
=> s l5 and mn/mac
      354351 MN/MAC
L6      18 L5 AND MN/MAC
```

```
=> file caplus
COST IN U.S. DOLLARS                SINCE FILE      TOTAL
                                   ENTRY      SESSION
FULL ESTIMATED COST                25.56      25.77
```

FILE 'CAPLUS' ENTERED AT 13:54:01 ON 24 OCT 2006  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is  
held by the publishers listed in the PUBLISHER (PB) field (available  
for records published or updated in Chemical Abstracts after December  
26, 1996), unless otherwise indicated in the original publications.  
The CA Lexicon is the copyrighted intellectual property of the  
American Chemical Society and is provided to assist you in searching  
databases on STN. Any dissemination, distribution, copying, or storing  
of this information, without the prior written consent of CAS, is  
strictly prohibited.

FILE COVERS 1907 - 24 Oct 2006 VOL 145 ISS 18  
FILE LAST UPDATED: 23 Oct 2006 (20061023/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.  
They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> s 15  
L7 136 L5

=> s 16  
L8 7 L6

=> d all 1-7

L8 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2006:340548 CAPLUS <<LOGINID::20061024>>  
DN 144:379214  
ED Entered STN: 13 Apr 2006  
TI Phase-changeable optical recording materials with heat diffusion layer  
IN Shibata, Kiyoto; Yuzuhara, Hajime; Hanaoka, Katsushige; Kaneko, Yujiro  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 19 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006099927	A2	20060413	JP 2005-123702	20050421
PRAI	JP 2004-256266	A	20040902		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2006099927	IPC I	G11B0007-24 [I,A]; G11B0007-243 [I,A]; G11B0007-258 [I,A]
	FTERM	5D029/JA01; 5D029/JB11; 5D029/KB12; 5D029/LC17; 5D029/MA13; 5D029/MA14; 5D029/MA27; 5D029/WA02; 5D029/WB11; 5D029/WB17

AB The material, using cryst. and amorphous phase-change by light irradiation, comprises a pre-grooved substrate successively having (A) an amorphous heat-diffusion layer, (B) 1st protective layer, (C) a recording layer, (D) 2nd protective layer, and (E) a reflection layer, in which the thermal cond. of A is higher than that of B. Alternatively, the material comprises the pre-grooved substrate successively having E, D, C, B, and A. The material is suited for blue light (e.g., 405 nm) and good recording and reading properties.

ST phase changeable optical recording material amorphous heat diffusion layer; thermal cond protective layer heat diffusion layer

IT Optical recording materials  
(phase-changeable optical recording materials with heat diffusion layer)

IT 183144-78-7, Indium zinc oxide (In<sub>1.36</sub>Zn<sub>0.32</sub>O<sub>2.36</sub>) 731855-00-8, Indium zinc oxide (In<sub>1.45</sub>Zn<sub>0.27</sub>O<sub>2.45</sub>)

RL: TEM (Technical or engineered material use); USES (Uses)  
(heat-diffusion layer; phase-changeable optical recording materials with heat diffusion layer)

IT 882071-87-6, Silicon zinc oxide sulfide (Si<sub>0.29</sub>Zn<sub>0.71</sub>O<sub>0.58</sub>S<sub>0.71</sub>)  
882071-88-7, Silicon zinc oxide sulfide (Si<sub>0.41</sub>Zn<sub>0.59</sub>O<sub>0.82</sub>S<sub>0.59</sub>)

RL: TEM (Technical or engineered material use); USES (Uses)  
(protective layer; phase-changeable optical recording materials with heat diffusion layer)

IT 384829-24-7 384829-32-7 882071-89-8 882071-90-1 882071-91-2  
\*\*\*882071-92-3\*\*\* 882071-93-4 882071-94-5 882071-95-6  
882071-96-7 \*\*\*882071-97-8\*\*\*

RL: TEM (Technical or engineered material use); USES (Uses)  
(recording layer; phase-changeable optical recording materials with heat diffusion layer)

IT 52864-21-8

RL: TEM (Technical or engineered material use); USES (Uses)  
(reflection layer; phase-changeable optical recording materials with

heat diffusion layer)

L8 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:877898 CAPLUS <<LOGINID::20061024>>  
DN 141:372852  
ED Entered STN: 22 Oct 2004  
TI Optical recording medium comprising antimony germanium manganese tellurium alloy  
IN Shingai, Hiroshi; Kato, Tatsuya; Hirata, Hideki  
PA TDK Corporation, Japan  
SO U.S. Pat. Appl. Publ., 17 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM G11B007-24  
INCL 369059110; 369288000; 369283000; 369047530; 369094000  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004208105	A1	20041021	US 2004-824081	20040414
	JP 2004319033	A2	20041111	JP 2003-113550	20030418
PRAI	JP 2003-113550	A	20030418		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004208105	ICM	G11B007-24
	INCL	369059110; 369288000; 369283000; 369047530; 369094000
	IPCI	G11B0007-24 [ICM,7]
	IPCR	B41M0005-26 [I,C*]; B41M0005-26 [I,A]; G11B0007-00 [I,C*]; G11B0007-0045 [I,A]; G11B0007-125 [I,C*]; G11B0007-125 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-243 [I,A]; G11B0007-257 [I,A]; G11B0007-258 [I,A]
	NCL	369/059.110; 369/047.530; 369/094.000; 369/283.000; 369/288.000
	ECLA	G11B007/243; G11B007/257
JP 2004319033	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-125 [ICS,7]
	IPCR	G11B0007-00 [N,C*]; G11B0007-0045 [N,A]
	FTERM	2H111/EA04; 2H111/EA23; 2H111/FA01; 2H111/FA12; 2H111/FA18; 2H111/FA21; 2H111/FA23; 2H111/FA28; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB16; 2H111/FB30; 5D029/HA06; 5D029/JA01; 5D029/JB18; 5D029/LB04; 5D029/LB07; 5D029/MA13; 5D029/MA27; 5D090/AA01; 5D090/BB05; 5D090/CC01; 5D090/DD01; 5D090/EE01; 5D090/EE05; 5D090/HH01; 5D090/KK03; 5D789/AA24; 5D789/BA01; 5D789/BB03; 5D789/DA01; 5D789/EC09

AB An optical recording medium includes a recording layer, a first dielec. layer disposed on the side of a light incidence plane through which the laser beam enters with respect to the recording layer, a second dielec. layer disposed on the side opposite to the light incidence plane with respect to the recording layer, a heat radiation layer disposed on the side of the light incidence plane with respect to the first dielec. layer and a reflective layer disposed on the side opposite to the light incidence plane with respect to the second dielec. layer, the recording layer contg. a phase change material represented by an at. compn. formula:  $Sb_{55}Te_{b}Ge_{c}Mn_{d}$ , where  $55 \leq b \leq 70$ ;  $4 \leq c \leq 10$ ;  $10 \leq d \leq 20$ ;  $2.8 \leq a/b \leq 3.5$ ;  $3.0 \leq a/d \leq 6.0$ ; in an amt.  $\geq 95$  at.%. According to the thus constituted optical recording medium, it is possible to simultaneously improve characteristics of recording data at a high linear velocity, data reprodn. durability and storage reliability.

ST optical recording disk antimony tellurium germanium manganese alloy  
IT Optical disks  
(optical recording medium)

IT 24304-00-5, Aluminum nitride 58739-36-9 178255-68-0, Silicon zinc oxide sulfide ( $Si_{0.1}Zn_{0.4}O_{0.2}S_{0.4}$ ) 302919-35-3, Silicon zinc oxide sulfide ( $SiZnO_2S$ ) \*\*\*777941-64-7\*\*\* \*\*\*777941-65-8\*\*\*  
\*\*\*777941-67-0\*\*\* 777941-68-1 \*\*\*777941-69-2\*\*\*

\*\*\*777941-71-6\*\*\*

RL: TEM (Technical or engineered material use); USES (Uses)  
(optical recording medium)

L8 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:472700 CAPLUS <<LOGINID::20061024>>  
DN 141:31146  
ED Entered STN: 11 Jun 2004  
TI Phase change optical recording medium containing mixture of zirconium  
oxide and zinc sulfide  
IN Abe, Mikiko; Yuzuhara, Hajime; Suzuki, Eiko; Deguchi, Hiroshi; Miura,  
Hiroshi  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS B41M005-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004164806	A2	20040610	JP 2002-373624	20021225
PRAI	JP 2002-278185	A	20020924		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004164806	ICM	G11B007-24
	ICS	B41M005-26
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]
	FTERM	2H111/EA04; 2H111/EA23; 2H111/FA01; 2H111/FA11; 2H111/FA12; 2H111/FA14; 2H111/FA21; 2H111/FA23; 2H111/FA25; 2H111/FA27; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB16; 2H111/FB17; 2H111/FB20; 2H111/FB21; 2H111/FB30; 5D029/JA01; 5D029/JB18; 5D029/LA13; 5D029/LA17; 5D029/LA19; 5D029/LB07; 5D029/LB11; 5D029/MA13

AB Disclosed is the phase change optical recording medium comprising a 1st  
protective layer, a phase change recording layer, a 2nd protective layer,  
and a reflection layer in th order on a translucent substrate, wherein a  
thin film layer with a thickness 1-10 nm made from a mixt of ZrO2 and ZnS  
is formed between the recording layer and the 1st protective layer or  
between the recording layer and the 2nd protective layer. The recording  
layer is made from GeaSbbTe1-a-b (0.03.ltoreq.a.ltoreq.0.07; and  
0.65.ltoreq.b.ltoreq.0.85).

ST phase change optical recording disk zirconium oxide zinc sulfide

IT Optical disks

(phase change optical recording medium contg. mixt. of zirconium oxide  
and zinc sulfide)

IT 1314-23-4, Zirconia, uses 1314-98-3, Zinc sulfide, uses 7440-22-4,  
Silver, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses  
700363-73-1 700363-74-2 \*\*\*700363-75-3\*\*\*

RL: DEV (Device component use); USES (Uses)

(phase change optical recording medium contg. mixt. of zirconium oxide  
and zinc sulfide)

L8 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:118546 CAPLUS <<LOGINID::20061024>>  
DN 140:190044  
ED Entered STN: 13 Feb 2004  
TI Phase-change optical recording media such as optical disk and method for  
recording thereon  
IN Yuzuhara, Hajime; Abe, Mikiko; Deguchi, Hiroshi; Miura, Hiroshi; Suzuki,  
Eiko  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 18 pp.  
CODEN: JKXXAF  
DT Patent

LA Japanese  
IC ICM G11B007-24  
ICS B41M005-26; G11B007-0045; G11B007-125  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004046956	A2	20040212	JP 2002-201667	20020710
PRAI	JP 2002-201667		20020710		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004046956	ICM	G11B007-24
	ICS	B41M005-26; G11B007-0045; G11B007-125
	IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-125 [ICS,7]
	IPCR	B41M0005-26 [I,C*]; B41M0005-26 [I,A]; G11B0007-00 [I,C*]; G11B0007-0045 [I,A]; G11B0007-125 [I,C*]; G11B0007-125 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-241 [I,A]; G11B0007-243 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]; G11B0007-258 [I,A]
	FTERM	2H111/EA04; 2H111/EA23; 2H111/EA31; 2H111/EA36; 2H111/FA01; 2H111/FA11; 2H111/FA12; 2H111/FA14; 2H111/FA21; 2H111/FA23; 2H111/FA24; 2H111/FA25; 2H111/FA27; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB16; 2H111/FB17; 2H111/FB21; 2H111/FB30; 5D029/JA01; 5D029/JB18; 5D029/JC20; 5D029/LA14; 5D029/LA15; 5D029/LB01; 5D029/LB04; 5D029/MA13; 5D029/NA13; 5D090/AA01; 5D090/BB05; 5D090/CC01; 5D090/DD01; 5D090/EE01; 5D090/HH01; 5D090/KK03; 5D090/KK05; 5D119/AA21; 5D119/AA24; 5D119/BA01; 5D119/BB04; 5D119/DA01; 5D119/DA02; 5D119/DA07; 5D119/EC09; 5D119/HA45; 5D119/HA52; 5D789/AA21; 5D789/AA24; 5D789/BA01; 5D789/BB04; 5D789/DA01; 5D789/DA02; 5D789/DA07; 5D789/EC09; 5D789/HA45; 5D789/HA52

AB The title medium has a first dielec. protective layer, a phase-change recording layer, a second dielec. protective layer, and a reflective layer on a substrate, wherein the upper linear velocity(Vcu) of recrystn. of the recording layer is between max. recording linear velocity and min. recording linear velocity and satisfies equation:  
 $(V_{max} + V_{min}) / 2 < V_{cu} < \{(V_{max} + V_{min}) / 2\} + 3$ . The medium is for high linear speed recording and also is suitable for low speed recording.

ST optical recording media phase change

IT Erasable optical disks

(phase-change; optical recording media and method for recording using the same)

IT	657403-84-4	657403-85-5	657403-86-6	657403-87-7	657403-88-8
	657403-89-9	***657403-90-2***	***657403-91-3***		657403-92-4
	657403-93-5	***657403-94-6***	657403-95-7		

RL: DEV (Device component use); USES (Uses)

(phase-change recording layer of optical recording media)

L8 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:945325 CAPLUS <<LOGINID::20061024>>

DN 140:10702

ED Entered STN: 04 Dec 2003

TI Phase-changeable optical recording material containing antimony and tellurium

IN Shinkai, Hiroshi; Utsunomiya, Hajime

PA TDK Corporation, Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26

ICS G11B007-004; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003341230	A2	20031203	JP 2002-151744	20020527
PRAI	JP 2002-151744		20020527		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2003341230	ICM	B41M005-26
		ICS	G11B007-004; G11B007-24
		IPCI	B41M0005-26 [ICM,7]; G11B0007-004 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-24 [ICS,7]
		IPCR	B41M0005-26 [I,C*]; B41M0005-26 [I,A]; G11B0007-00 [I,C*]; G11B0007-004 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-243 [I,A]
AB	SbTe (mainly contg. Sb) phase changeable optical recording material contains an element, in which the difference of electronegativity between the element and Te is .gtoreq.0.5. The material contains an element with electronegativity .ltoreq.1.6. The material is suited for high speed recording and shows good storage stability.		
ST	phase changeable optical recording material antimony tellurium; electronegativity element tellurium antimony optical recording		
IT	Optical recording materials (phase-changeable optical recording material contg. antimony, tellurium, and element with controlled electronegativity)		
IT	627877-20-7 RL: DEV (Device component use); USES (Uses) (Tphase-changeable optical recording material contg. antimony, tellurium, and element with controlled electronegativity)		
IT	***627877-16-1***      ***627877-17-2***      627877-18-3      627877-19-4 627877-21-8    627877-22-9    627877-23-0    627877-24-1    627877-25-2 627877-26-3    627877-27-4    627877-28-5    627877-29-6    627877-30-9 627877-31-0    627877-32-1    627877-33-2    627877-34-3    627877-35-4 627877-36-5 RL: DEV (Device component use); USES (Uses) (phase-changeable optical recording material contg. antimony, tellurium, and element with controlled electronegativity)		

L8 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:794100 CAPLUS <<LOGINID::20061024>>  
DN 139:314564  
ED Entered STN: 10 Oct 2003  
TI Erasable phase-change optical recording media for high-speed writing with no initialization required  
IN Miura, Hiroshi; Shinkai, Masaru; Shibata, Kiyoto; Harigai, Masato; Hanaoka, Katsushige  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
ICS B41M005-26  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003288737	A2	20031010	JP 2002-130158	20020501
PRAI	JP 2002-17389	A	20020125		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2003288737	ICM	G11B007-24
		ICS	B41M005-26
		IPCI	G11B0007-24 [ICM,7]; B41M0005-26 [ICS,7]
		IPCR	B41M0005-26 [I,C*]; B41M0005-26 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-243 [I,A]
AB	The recording medium has (A) a recording layer contg. Sb, Te, and optionally other elements selected from Group I to VII and (B) other layers contg. crystn. accelerators, wherein the crystn. accelerators diffuse into the recording layer by energy irradiation of writing processes.		
ST	phase change optical disk initialization free; erasable optical recording		

medium antimony telluride

IT Erasable optical disks  
(erasable phase-change optical disks for high-speed writing with no initialization required)

IT 610269-84-6 610269-85-7 610269-86-8 610269-87-9 610269-88-0  
610269-89-1  
RL: DEV (Device component use); USES (Uses)  
(crystn. accelerating layer contg.; erasable phase-change optical disks for high-speed writing with no initialization required)

IT 610269-91-5 610269-92-6 610269-93-7 610269-94-8 610269-95-9  
610269-96-0 \*\*\*610269-97-1\*\*\* \*\*\*610269-98-2\*\*\*  
RL: DEV (Device component use); FMU (Formation, unclassified); FORM (Formation, nonpreparative); USES (Uses)  
(formed by recording processes; erasable phase-change optical disks for high-speed writing with no initialization required)

IT 124307-63-7, Antimony 80, tellurium 20 (atomic) 610269-90-4  
RL: DEV (Device component use); USES (Uses)  
(recording layer; erasable phase-change optical disks for high-speed writing with no initialization required)

IT 7440-42-8, Boron, uses 7440-44-0, Carbon, uses 7440-74-6, Indium, uses 7727-37-9, Nitrogen, uses  
RL: DEV (Device component use); USES (Uses)  
(recording stabilizer; erasable phase-change optical disks for high-speed writing with no initialization required)

L8 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:904454 CAPLUS <<LOGINID::20061024>>

DN 138:9714

ED Entered STN: 29 Nov 2002

TI Optical recording medium and recording method

IN Harigaya, Makoto; Miura, Hiroshi; Okura, Hiroko; Mizutani, Miku; Hibino, Eiko; Yuzurihara, Hajime; Kageyama, Yoshiyuki; Abe, Mikiko; Deguchi, Hiroshi; Ito, Kazunori

PA Ricoh Company Ltd., Japan

SO Eur. Pat. Appl., 32 pp.  
CODEN: EPXXDW

DT Patent

LA English

IC ICM G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1260973	A2	20021127	EP 2002-11189	20020521
	EP 1260973	A3	20030716		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003305955	A2	20031028	JP 2002-113269	20020416
	US 2003012917	A1	20030116	US 2002-151324	20020520
	US 6770346	B2	20040803		
	EP 1686575	A2	20060802	EP 2006-10396	20020521
	EP 1686575	A3	20060920		
	R: DE, FR, GB, SI, LT, LV, RO, MK, AL				
	EP 1703497	A2	20060920	EP 2006-10397	20020521
	R: DE, FR, GB				
PRAI	JP 2001-151129	A	20010521		
	JP 2001-290036	A	20010921		
	JP 2002-35131	A	20020213		
	JP 2002-113269	A	20020416		
	EP 2002-11189	A3	20020521		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1260973	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,6]
	IPCR	B41M0005-26 [I,C*]; B41M0005-26 [I,A]; G11B0007-00 [I,C*]; G11B0007-0045 [I,A]; G11B0007-006 [I,A]; G11B0007-125 [I,C*]; G11B0007-125 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-243 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]; G11B0007-258



[I,A]

JP 2003305955 ECLA G11B0007/243  
 IPCI B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7];  
 G11B0007-006 [ICS,7]; G11B0007-00 [ICS,7,C\*];  
 G11B0007-125 [ICS,7]; G11B0007-24 [ICS,7]  
 IPCR B41M0005-26 [I,C\*]; B41M0005-26 [I,A]; G11B0007-00  
 [I,C\*]; G11B0007-0045 [I,A]; G11B0007-006 [I,A];  
 G11B0007-125 [I,C\*]; G11B0007-125 [I,A]; G11B0007-24  
 [I,C\*]; G11B0007-24 [I,A]; G11B0007-243 [I,A];  
 G11B0007-254 [I,A]; G11B0007-257 [I,A]; G11B0007-258  
 [I,A]

US 2003012917 IPCI B32B0003-02 [ICM,7]  
 IPCR G11B0007-24 [I,C\*]; G11B0007-243 [I,A]  
 NCL 428/064.400  
 ECLA G11B0007/243

EP 1686575 IPCI G11B0007-24 [I,A]; G11B0007-0045 [I,A]; G11B0007-006  
 [I,A]; G11B0007-00 [I,C\*]; G11B0007-24 [N,A]  
 ECLA G11B0007/006S

EP 1703497 IPCI G11B0007-00 [I,A]  
 ECLA G11B0007/006S

AB An optical recording medium is described comprising a recording layer  
 contg. a phase-change recording material causing a reversible phase change  
 between a cryst. phase and an amorphous phase by irradiation with an  
 electromagnetic wave, wherein the phase change material mainly comprises  
 materials expressed by the compn. formula X:Ge:Mn:Sb:Te  
 (.alpha.:.beta.:.gamma.:.delta.:.epsilon.) with each of the components  
 resp. fulfills .alpha. = 0-5, .beta. = 1-5, .gamma. = 1-10, .delta. =  
 65-80, .epsilon. = 15-25, and .alpha. .ltoreq. .gamma. (X = Ga, Sn;  
 .alpha., .beta., .gamma., .delta., .epsilon. expresses at.%, and .alpha. +  
 .beta. + .gamma. + .delta. + .epsilon. = 100). A method for recording to  
 an optical recording medium is also described entailing a step for  
 irradiating a multi-pulse light to form a recording mark having a  
 prescribed length of which a recording time = nT (integer n >2, and T =  
 ref. clock); characterized in that the multi-pulse light comprises a pulse  
 train having; (a) a first heating and a cooling pulse; (b) an intermediate  
 heating and a cooling pulse; and (c) a last heating and a cooling pulse;  
 and when a heating pulse time is expressed as Opi and a cooling pulse time  
 is expressed as Fpi such that a first heating pulse time and a head  
 cooling pulse time of the pulse train are resp. expressed by OP1 and FP1,  
 a last heating pulse time and a last cooling pulse time of the pulse train  
 are resp. expressed by OPm and Fpm, one or a plurality of an intermediate  
 heating pulse time and an intermediate cooling pulse time of the pulse  
 train are resp. expressed by OPj and FPj (j=2..., m-1); wherein the no.  
 of pulse m is equal to L when the length of the prescribed recording mark  
 n is 2L (integer L .gtoreq.2) or 2L + 1 (integer L .gtoreq.1); and the  
 length of each pulse part OPi + FPi (i = 1, ..., m) is substantially two  
 times longer compared to the ref. clock T.

ST optical recording medium method  
 IT Optical recording  
 Optical recording materials  
 Phase change materials  
 (optical recording medium using phase change materials and recording  
 method)

IT Alloys, uses  
 RL: DEV (Device component use); USES (Uses)  
 (recording media; optical recording medium using phase change materials  
 and recording method)

IT 1309-48-4, Magnesium oxide (MgO), uses 13463-67-7, Titanium oxide  
 (TiO2), uses  
 RL: DEV (Device component use); USES (Uses)  
 (optical recording medium using phase change materials and recording  
 method)

IT 409-21-2, Silicon carbide (SiC), uses 1314-23-4, Zirconium oxide (ZrO2),  
 uses 1314-36-9, Yttrium oxide (Y2O3), uses 1314-98-3, Zinc sulfide  
 (ZnS), uses 7440-21-3, Silicon, uses 7631-86-9, Silica, uses  
 7704-34-9, Sulfur, uses  
 RL: DEV (Device component use); USES (Uses)  
 (protection layer; optical recording medium using phase change  
 materials and recording method)

IT 476485-52-6 476485-53-7 \*\*\*476485-54-8\*\*\* \*\*\*476485-55-9\*\*\*  
 \*\*\*476485-57-1\*\*\* 476485-60-6 476485-62-8 476485-65-1  
 476485-67-3 476485-69-5 476485-71-9 476485-73-1 476485-75-3

476485-77-5 476485-79-7 476485-81-1 476485-83-3 476485-85-5  
476485-87-7 476485-89-9 476485-92-4 476485-94-6 476485-96-8  
476485-98-0 476486-00-7

RL: DEV (Device component use); USES (Uses)  
(recording layer; optical recording medium using phase change materials  
and recording method)

IT 7429-90-5D, Aluminum, alloy 7440-22-4, Silver, uses 476485-51-5

RL: DEV (Device component use); USES (Uses)  
(reflection layer; optical recording medium using phase change  
materials and recording method)

=> s 15 and (mn or manganese)

136 L5  
421124 MN  
5029 MNS  
424057 MN  
(MN OR MNS)  
364933 MANGANESE  
112 MANGANESES  
364943 MANGANESE  
(MANGANESE OR MANGANESES)

L9 12 L5 AND (MN OR MANGANESE)

=> s 19 not 18

L10 10 L9 NOT L8

=> d all 1-10

L10 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2006:1004518 CAPLUS <<LOGINID::20061024>>

DN 145:366621

ED Entered STN: 28 Sep 2006

TI Dual-layer phase transition optical recording medium with high erase ratio  
and contrast

IN Hanaoka, Katsushige; Iwasa, Hiroyuki; Shibata, Kiyoto; Kaneko, Yujiro;  
Yuzuhara, Hajime

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15pp.

CODEN: JKXXAF

DT Patent

LA Japanese

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006256196	A2	20060928	JP 2005-78700	20050318
PRAI	JP 2005-78700		20050318		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2006256196	IPC1	B41M0005-26 [I,A]; C22C0012-00 [I,A]; G11B0007-24 [I,A]
	FTerm	2H111/EA04; 2H111/EA23; 2H111/EA37; 2H111/FA12; 2H111/FA14; 2H111/FA17; 2H111/FB05; 2H111/FB06; 2H111/FB09; 2H111/FB10; 2H111/FB12; 2H111/FB16; 2H111/FB17; 2H111/FB19; 2H111/FB20; 2H111/FB21; 2H111/FB23; 5D029/JA01; 5D029/JB03; 5D029/JB05; 5D029/JB08; 5D029/JB37

AB The disclosed recording medium has a 1st information layer (L1) and a 2nd  
information layer (L2) between substrates for recording and reproducing  
information by laser irradiation from L1 side, wherein L1 includes a 1st phase  
transition recording layer having a compn. represented by  
Ge.alpha.1Sb.beta.1Te.gamma.1M1.delta.1 (M1 = Ag, In, Sn, V, \*\*\*Mn\*\*\* ,  
Zn, Ga, Dy, Au; 0 < .alpha.1 < 10; 25 < .beta.1 < 40; 0 < .gamma.1 < 10; 0  
.ltoreq. .delta.1 < 10; .alpha.1 + .beta.1 + .gamma.1 + .delta.1 = 100  
at.%), and L2 includes a 2nd phase transition recording layer having a  
compn. represented by Ge.alpha.2Sb.beta.2Sn.gamma.2M2.delta.2 (M2 = In,  
Bi, Te, Ag, V, \*\*\*Mn\*\*\* , Al, Zn, Co, Ni, Cu, Dy, Au; 5 < .alpha.2 <  
25; 45 < .beta.2 < 75; 10 < .gamma.2 < 30; 0 .ltoreq. .delta.2 < 15;  
.alpha.2 + .beta.2 + .gamma.2 + .delta.2 = 100 at.%). The recording

medium has high recording signal quality, and is useful for optical disks, such as DVD-RW.

ST dual layer phase transition optical recording medium; germanium antimony tellurium alloy dual recording layer optical disk; tin germanium antimony alloy dual recording layer optical disk; optical disk rewritable erase ratio contrast

IT Erasable optical disks  
Optical recording materials  
(dual-layer phase transition optical recording medium with high erase ratio, contrast, and high-quality information signals)

IT \*\*\*851761-17-6\*\*\* , Antimony 72, germanium 5, indium 2, tellurium 21 (atomic)  
RL: TEM (Technical or engineered material use); USES (Uses)  
(1st recording layer; dual-layer phase transition optical recording medium with high erase ratio, contrast, and high-quality information signals)

IT 910464-82-3 910464-83-4 910464-84-5  
RL: TEM (Technical or engineered material use); USES (Uses)  
(2nd recording layer; dual-layer phase transition optical recording medium with high erase ratio, contrast, and high-quality information signals)

L10 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:426518 CAPLUS <<LOGINID::20061024>>  
DN 142:472661  
ED Entered STN: 19 May 2005  
TI Two-layer phase-change information recording medium and recording method  
IN Iwasa, Hiroyuki; Shinotsuka, Michiaki; Shinkai, Masaru  
PA Ricoh Company, Ltd., Japan  
SO PCT Int. Appl., 39 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
IC ICM B41M005-26  
ICS G11B007-24; G11B007-0045  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005044575	A1	20050519	WO 2004-JP16139	20041029
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005153496	A2	20050616	JP 2004-153506	20040524
JP 3679107	B2	20050803		
EP 1683647	A1	20060726	EP 2004-793240	20041029
R: DE, ES, FR, GB, IT, NL				
US 2006233095	A1	20061019	US 2006-417334	20060502
PRAI JP 2003-376003	A	20031105		
JP 2004-153506	A	20040524		
WO 2004-JP16139	W	20041029		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2005044575	ICM	B41M005-26
	ICS	G11B007-24; G11B007-0045
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-00 [ICS,7,C*]
	IPCR	B41M0005-26 [I,C*]; B41M0005-26 [I,A]; G11B0007-00 [I,C*]; G11B0007-0045 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-243 [I,A]; G11B0007-258 [I,A]
JP 2005153496	IPCI	B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-00

[ICS,7,C\*]; G11B0007-24 [ICS,7]  
IPCR B41M0005-26 [I,A]; B41M0005-26 [I,C\*]; G11B0007-00  
[I,C\*]; G11B0007-0045 [I,A]; G11B0007-24 [I,A];  
G11B0007-24 [I,C\*]

FTERM 2H111/EA03; 2H111/EA04; 2H111/EA12; 2H111/EA23;  
2H111/EA31; 2H111/EA36; 2H111/FA02; 2H111/FA11;  
2H111/FA12; 2H111/FA14; 2H111/FA23; 2H111/FA25;  
2H111/FB04; 2H111/FB05; 2H111/FB06; 2H111/FB08;  
2H111/FB09; 2H111/FB12; 2H111/FB15; 2H111/FB16;  
2H111/FB17; 2H111/FB19; 2H111/FB21; 2H111/FB22;  
2H111/FB23; 2H111/FB27; 2H111/FB28; 2H111/FB29;  
5D029/HA06; 5D029/JA01; 5D029/JB13; 5D029/JB18;  
5D029/JB35; 5D029/KB14; 5D029/LB02; 5D029/MA13;  
5D029/MA14; 5D029/MA27; 5D090/AA01; 5D090/BB05;  
5D090/BB12; 5D090/CC02; 5D090/CC14; 5D090/DD01;  
5D090/EE01; 5D090/EE05; 5D090/EE11; 5D090/FF12

EP 1683647 IPCI B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-0045  
[ICS,7]; G11B0007-00 [ICS,7,C\*]

IPCR B41M0005-26 [I,C\*]; B41M0005-26 [I,A]; G11B0007-00  
[I,C]; G11B0007-0045 [I,A]; G11B0007-24 [I,C];  
G11B0007-24 [I,A]; G11B0007-243 [I,A]; G11B0007-258  
[I,A]

US 2006233095 IPCI G11B0003-74 [I,A]; G11B0003-70 [I,A]; G11B0003-00  
[I,C\*]

NCL 369/288.000; 369/094.000

AB The invention relates to a two-layer phase change information recording  
medium wherein a first recording layer comprises a material represented by  
the empirical formula: Sb.alpha.1 Te.beta.1 Ge.gamma.1 M1.delta.1, and a  
second recording layer comprises a material represented by the empirical  
formula: Sb.alpha.2 Te.beta.2 Ge.gamma.2 M2.delta.2, wherein each of M1  
and M2 is at least one element selected from among Ag, In, Se, Sn, Al, Ti,  
V, \*\*\*Mn\*\*\*, Fe, Co, Ni, Cu, Zn, Ga, Bi, Si, Dy, Pd, Pt; Au, S, B, C  
and P and satisfy .alpha.1 + .beta.1 + .gamma.1 + .delta.1 = .alpha.2 +  
.beta.2 + .gamma.2 + .delta.2 = 100 at. %, 50 .ltoreq. .alpha.1 .ltoreq.  
75, 25 .ltoreq. .beta.1 .ltoreq. 40, 0 < .gamma.1 .ltoreq. 10, 0 .ltoreq.  
.delta.1 .ltoreq. 10, 60 .ltoreq. .alpha.2 .ltoreq. 85, 15 .ltoreq.  
.beta.2 .ltoreq. 30, 0 < .gamma.2 .ltoreq. 10, 0 .ltoreq. .delta.2  
.ltoreq. 10, and .beta.2 + .gamma.2 < .beta.1 + .gamma.1 .ltoreq. .beta.2  
+ .gamma.2 + 20. The above two-layer phase change information recording  
medium is excellent in the erasure ratio of each layer, exhibits an  
improved dynamic range, and can achieve the multi-level recording.

ST phase change information recording

IT Erasable optical disks

(phase-change; two-layer phase-change information recording medium and  
recording method)

IT Optical recording

(two-layer phase-change information recording medium and recording  
method)

IT 384829-32-7 \*\*\*479063-02-0\*\*\* \*\*\*717887-71-3\*\*\* 851761-10-9

851761-11-0 \*\*\*851761-12-1\*\*\* 851761-13-2 \*\*\*851761-14-3\*\*\*

851761-15-4 \*\*\*851761-16-5\*\*\* \*\*\*851761-17-6\*\*\*

\*\*\*851761-18-7\*\*\* \*\*\*851761-19-8\*\*\* 851761-20-1

\*\*\*851761-21-2\*\*\* \*\*\*851761-22-3\*\*\*

RL: DEV (Device component use); USES (Uses)

(recording layers in two-layer phase-change information recording  
medium)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Matsushita Electric Industrial Co Ltd; EP 1187119 A2 2002 CAPLUS
- (2) Matsushita Electric Industrial Co Ltd; JP 2002144736 A 2002 CAPLUS
- (3) Matsushita Electric Industrial Co Ltd; US 20254983 A1 2002
- (4) Mitsubishi Chemical Corp; EP 1117094 A2 2001
- (5) Mitsubishi Chemical Corp; US 200112253 A1 2001
- (6) Mitsubishi Chemical Corp; JP 2001273638 A 2001 CAPLUS
- (7) Ricoh Co Ltd; EP 1296315 A2 2003 CAPLUS
- (8) Ricoh Co Ltd; JP 2003100020 A 2003 CAPLUS
- (9) Ricoh Co Ltd; JP 2003242676 A 2003 CAPLUS
- (10) Ricoh Co Ltd; US 200358763 A1 2003
- (11) Toray Industries Inc; JP 02-112987 A 1990 CAPLUS

L10 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:16957 CAPLUS <<LOGINID::20061024>>

DN 142:123261  
 ED Entered STN: 09 Jan 2005  
 TI Optical information recording medium and recording device  
 IN Yamamoto, Hiroki; Naito, Takashi; Shintani, Toshimichi  
 PA Japan  
 SO U.S. Pat. Appl. Publ., 26 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM G11B007-24  
 INCL 430270130; 430945000; 428064400  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005003302	A1	20050106	US 2004-804098	20040319
	JP 2005025848	A2	20050127	JP 2003-189501	20030701
PRAI	JP 2003-189501	A	20030701		

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US	2005003302	ICM	G11B007-24
		INCL	430270130; 430945000; 428064400
		IPCI	G11B0007-24 [ICM,7]
		IPCR	G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-09 [I,C*]; G11B0007-09 [I,A]; G11B0007-258 [I,A]; G11B0007-26 [I,C*]; G11B0007-26 [I,A]
		NCL	430/270.130; 428/064.400; 430/945.000
		ECLA	G11B007/007G; G11B007/24S4; G11B007/257
JP	2005025848	IPCI	G11B0007-24 [ICM,7]; G11B0007-09 [ICS,7]; G11B0007-26 [ICS,7]
		IPCR	G11B0007-09 [I,A]; G11B0007-09 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]
		FTERM	5D029/JA01; 5D029/JB13; 5D029/LB07; 5D029/LC08; 5D029/MA13; 5D029/MA14; 5D029/MA15; 5D029/MA16; 5D029/MA17; 5D118/BA01; 5D118/CD04; 5D121/AA04; 5D121/AA05; 5D121/EE03; 5D121/EE05; 5D121/EE17; 5D121/EE19; 5D121/EE27

AB A multilayer optical information recording medium includes optical information recording layers, and dielec. multilayer reflecting layers provided under the optical information recording layers resp. Each of the dielec. multilayer reflecting layers includes: a laminate of low refractive index films and high refractive index films; and a variable refractive index film exhibiting change of refractive index induced by laser beam irradsn. Each of the dielec. multilayer reflecting layers is provided so that reflectance of a portion used for reading/writing information by condensed laser beam irradsn. is high while transmittance of the other portion is high. It is possible to reduce intensity of laser beam to be irradiated to the medium.  
 ST optical information recording disk medium multilayer reflecting layer  
 IT Optical disks  
     (optical information recording disk comprising multilayer reflecting layers)  
 IT 178255-68-0, Silicon zinc oxide sulfide (Si0.1Zn0.4O0.2S0.4)  
     RL: TEM (Technical or engineered material use); USES (Uses)  
         (dielec. layer; optical information recording disk comprising multilayer reflecting layers)  
 IT 12033-89-5, Silicon nitride, uses  
     RL: TEM (Technical or engineered material use); USES (Uses)  
         (optical information recording disk comprising multilayer reflecting layers)  
 IT \*\*\*479063-02-0\*\*\*  
     RL: TEM (Technical or engineered material use); USES (Uses)  
         (recording layer; optical information recording disk comprising multilayer reflecting layers)  
 IT 1306-23-6, Cadmium sulfide, uses 1308-06-1, Cobalt oxide (Co3O4)  
     1308-38-9, Chromium Oxide, uses 1309-37-1, Iron Oxide, uses 1313-13-9,  
     \*\*\*Manganese\*\*\* Oxide, uses 1313-99-1, Nickel Oxide, uses 1314-13-2,  
     Zinc Oxide, uses 1314-61-0, Tantalum Oxide 1314-62-1, Vanadium Oxide,  
     uses 1317-61-9, Iron Oxide, uses 7440-22-4, Silver, uses 7440-50-8,

Copper, uses 7440-57-5, Gold, uses 7631-86-9, Silicon Oxide, uses 13463-67-7, Titanium Oxide, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(reflecting layer; optical information recording disk comprising multilayer reflecting layers)

L10 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:841938 CAPLUS <<LOGINID::20061024>>

DN 141:340493

ED Entered STN: 15 Oct 2004

TI Phase changeable optical recording material having initialized phase of controlled orientation

IN Abe, Mikiko; Yuzuhara, Hajime; Deguchi, Hiroshi; Suzuki, Eiko; Miura, Hiroshi

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-26

ICS G11B007-24; G11B007-26

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004284024	A2	20041014	JP 2003-75317	20030319
PRAI	JP 2003-75317		20030319		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004284024	ICM	B41M005-26
	ICS	G11B007-24; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]; G11B0007-26 [ICS,7]
	IPCR	B41M0005-26 [I,A]; B41M0005-26 [I,C*]; G11B0007-24 [I,A]; G11B0007-24 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]
	FTERM	2H111/EA03; 2H111/EA04; 2H111/EA12; 2H111/EA23; 2H111/EA41; 2H111/FA12; 2H111/FA14; 2H111/FA24; 2H111/FB05; 2H111/FB06; 2H111/FB07; 2H111/FB09; 2H111/FB10; 2H111/FB12; 2H111/FB16; 2H111/FB17; 2H111/FB18; 2H111/FB19; 2H111/FB20; 2H111/FB21; 2H111/FB30; 5D029/HA06; 5D029/JA01; 5D029/JB35; 5D029/JC18; 5D029/LA14; 5D029/LB01; 5D029/LB07; 5D029/LB11; 5D121/AA01; 5D121/GG26

AB In the material comprising a support with tracks successively coated with 1st protective layer, a recording layer which changes between crystal and amorphous phases, 2nd protective layer, and a reflective layer, the crystal phase of the initialized recording layer with face interval 2.9-3.3 .ANG. and vertical to the support is oriented to have an angle of 30.+-.15.degree. to tangential line of the track. The material shows good recording and reading properties by laser beam.

ST phase change optical recording material crystal phase orientation; germanium antimony tellurium laser sensitive optical recording material

IT Optical recording materials

(erasable; phase changeable optical recording material having initialized phase of controlled orientation)

IT 7429-91-6, Dysprosium, uses 7439-92-1, Lead, uses 7439-96-5, \*\*\*Manganese\*\*\*, uses 7439-97-6, Mercury, uses 7440-22-4, Silver, uses 7440-28-0, Thallium, uses 7440-31-5, Tin, uses 7440-43-9, Cadmium, uses 7440-50-8, Copper, uses 7440-55-3, Gallium, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(antimony-gallium-tellurium layer contg.; phase changeable optical recording material having initialized phase of controlled orientation)

IT 1314-36-9, Yttria, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(metal oxide layer between recording layer and protective layer; phase changeable optical recording material having initialized phase of

controlled orientation)  
IT 1312-43-2, Indium oxide 1314-13-2, Zinca, uses 1314-23-4, Zirconia,  
uses 1317-36-8, Lead oxide, uses 1344-28-1, Alumina, uses 7631-86-9,  
Silica, uses 13463-67-7, Titania, uses 21651-19-4, Tin oxide (SnO)  
RL: TEM (Technical or engineered material use); USES (Uses)  
(metal oxide layer between recording layer and protective layer; phase  
changeable optical recording material having initialized phase of  
controlled orientation)  
IT \*\*\*773104-42-0\*\*\* \*\*\*773104-43-1\*\*\* 773104-44-2 773104-45-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(phase changeable optical recording material having initialized phase  
of controlled orientation)

L10 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:759249 CAPLUS <<LOGINID::20061024>>  
DN 141:285883  
ED Entered STN: 17 Sep 2004  
TI Phase change type optical recording disk showing excellent overwrite  
property  
IN Shinotsuka, Michiaki; Iwasa, Hiroyuki; Shinkai, Masaru  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 19 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004259367	A2	20040916	JP 2003-48692	20030226
PRAI	JP 2003-48692		20030226		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004259367	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C*]
	FTERM	5D029/HA06; 5D029/JA01; 5D029/JB13; 5D029/JB16; 5D029/LA14; 5D029/LB03; 5D029/LC06

AB The title optical recording disk comprises 2 Sb-Te recording layers,  
wherein the interfacial layers show 2.2-2.5 refraction index at 390-420  
nm. The interfacial layers contain Ti-C-O, Mo-C-O, V-C-O, Zr-C-O, Cr-C-O,  
Nb-C-O, \*\*\*Mn\*\*\* -C-O, Si-C-O, or Ta-C-O.

ST phase change optical recording disk interfacial layer overwrite property  
IT Erasable optical disks

(phase change type recording disk showing excellent overwrite property)  
IT 757242-99-2, Titanium carbide oxide (TiC1.600.4) 757243-05-3, Zirconium  
carbide oxide (ZrC1.600.4) 757243-10-0, Chromium carbide oxide  
(CrC1.600.4) 757243-15-5, Niobium carbide oxide (NbC1.600.4)  
757243-21-3, Tantalum carbide oxide (TaC1.600.4) 757243-27-9, Molybdenum  
carbide oxide (MoC1.600.4) 757243-31-5, Vanadium carbide oxide  
(VC1.600.4) 757243-32-6, \*\*\*Manganese\*\*\* carbide oxide (MnC1.600.4)  
757243-34-8, Silicon carbide oxide (SiC1.600.4)  
RL: DEV (Device component use); USES (Uses)  
(interfacial layer; phase change type recording disk showing excellent  
overwrite property)

IT 50926-11-9, ITO  
RL: DEV (Device component use); USES (Uses)  
(protective coating layer; phase change type recording disk showing  
excellent overwrite property)

IT 648424-57-1 \*\*\*674302-39-7\*\*\*  
RL: DEV (Device component use); USES (Uses)  
(recording layer; phase change type recording disk showing excellent  
overwrite property)

L10 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:372537 CAPLUS <<LOGINID::20061024>>  
DN 140:383157  
ED Entered STN: 07 May 2004  
TI Optical information recording apparatus and medium

IN Yamamoto, Hiroki; Naitou, Takashi  
 PA Hitachi, Ltd., Japan  
 SO U.S. Pat. Appl. Publ., 29 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM G11B007-00  
 INCL 369094000; 369283000  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US <del>2004085882</del>	A1	<del>20040506</del>	US 2003-641097	<u>20030815</u>
	JP 2004152392	A2	20040527	JP 2002-315906	20021030
	TW 238408	B1	20050821	TW 2003-92112688	20030509
	NL 1024021	A1	20040506	NL 2003-1024021	20030729
	NL 1024021	C2	20051220		
	KR 2004038616	A	20040508	KR 2003-57109	20030819
PRAI	JP 2002-315906	A	20021030		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004085882	ICM	G11B007-00
	INCL	369094000; 369283000
	IPCI	G11B0007-00 [ICM,7]
	IPCR	G11B0007-00 [I,C*]; G11B0007-005 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]
	NCL	369/094.000; 369/283.000
	ECLA	G11B007/24
JP 2004152392	IPCI	G11B0007-24 [ICM,7]; G11B0007-005 [ICS,7]; G11B0007-00 [ICS,7,C*]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C*]
	FTERM	5D029/LA14; 5D029/LA15; 5D029/LA16; 5D029/LA17; 5D029/LA19; 5D029/LB01; 5D029/LB07; 5D029/LB11; 5D029/LC01; 5D029/LC05; 5D029/MA09; 5D029/MA39; 5D090/AA01; 5D090/BB14; 5D090/BB16; 5D090/CC04; 5D090/CC14; 5D090/DD02; 5D090/KK20
TW 238408	IPCI	G11B0007-24 [ICS,7]
	IPCR	G11B0007-00 [I,C*]; G11B0007-24 [I,C*]; G11B0007-005 [I,A]; G11B0007-24 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]
NL 1024021	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]
	IPCR	G11B0007-00 [I,C*]; G11B0007-005 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-254 [I,A]; G11B0007-257 [I,A]
	ECLA	G11B007/24
KR 2004038616	IPCI	G11B0007-24 [ICM,7]

AB An optical information recording medium includes a recording layer for recording optical information, a plurality of laminated layers, and a substrate for supporting those layers, while a beam of a specific wavelength is being radiated, a light absorption peak is shifted to a longer or a shorter wavelength side than the peak located before said beam radiation, realizing a high S/N ratio and a high recording d. of the medium. The invention provides RAM and ROM optical disks with improved S/N ratio by having certain dielec. materials in super-resoln. film (light-condensing layer) of disks.

ST optical information DVD recording method medium RAM ROM disk

IT Memory devices

(RAM (random access); optical information recording app. and optical RAM and ROM disks comprising dielec. material in light-condensing layers)

IT Optical ROM disks

Optical recording

Optical recording materials

(optical information recording app. and optical RAM and ROM disks comprising dielec. material in light-condensing layers)

IT 1306-24-7, Cadmium selenide, uses 1308-06-1, Cobalt oxide (Co3O4)

1308-38-9, Chromium oxide, uses 1309-37-1, Iron oxide, uses 1313-13-9,

\*\*\*Manganese\*\*\* oxide, uses 1313-99-1, Nickel oxide, uses 1314-62-1,

Vanadium oxide, uses 1317-61-9, Iron oxide, uses 7440-22-4, Silver,



uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7631-86-9,  
 Silica, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (dielec. layer; optical information recording app. and optical RAM and  
 ROM disks comprising dielec. material in light-condensing layers)  
 IT 178255-68-0, Silicon zinc oxide sulfide (Si0.1Zn0.400.2S0.4)  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (optical information recording app. and optical RAM and ROM disks  
 comprising dielec. material in light-condensing layers)  
 IT \*\*\*479063-02-0\*\*\*  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (recording layer; optical information recording app. and optical RAM  
 and ROM disks comprising dielec. material in light-condensing layers)

L10 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:351494 CAPLUS <<LOGINID::20061024>>  
 DN 140:365982  
 ED Entered STN: 30 Apr 2004  
 TI Sputtering target made of phase change material and manufacture of the  
 target  
 IN Kawaguchi, Yukio; Shinkai, Hiroshi; Inoue, Hiroyasu; Hirata, Hideki;  
 Takasaki, Hiroshi  
 PA TDK Corporation, Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-26  
 ICS B22F003-10; C22C012-00; C22C013-00; C22C014-00; C22C016-00;  
 C22C018-00; C22C021-00; C22C022-00; C22C027-02; C22C027-06;  
 C22C028-00; C23C014-34; G11B007-26  
 CC 75-1 (Crystallography and Liquid Crystals)  
 Section cross-reference(s): 56, 74

FAN.CNT 1  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004130541	A2	20040430	JP 2002-294942	20021008
PRAI JP 2002-294942		20021008		

CLASS  

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004130541	ICM	B41M005-26
	ICS	B22F003-10; C22C012-00; C22C013-00; C22C014-00; C22C016-00; C22C018-00; C22C021-00; C22C022-00; C22C027-02; C22C027-06; C22C028-00; C23C014-34; G11B007-26
	IPCI	B41M0005-26 [ICM,7]; B22F0003-10 [ICS,7]; C22C0012-00 [ICS,7]; C22C0013-00 [ICS,7]; C22C0014-00 [ICS,7]; C22C0016-00 [ICS,7]; C22C0018-00 [ICS,7]; C22C0021-00 [ICS,7]; C22C0022-00 [ICS,7]; C22C0027-02 [ICS,7]; C22C0027-06 [ICS,7]; C22C0027-00 [ICS,7,C*]; C22C0028-00 [ICS,7]; C23C0014-34 [ICS,7]; G11B0007-26 [ICS,7]
	IPCR	B22F0003-10 [I,A]; B22F0003-10 [I,C*]; B41M0005-26 [I,A]; B41M0005-26 [I,C*]; C22C0012-00 [I,A]; C22C0012-00 [I,C*]; C22C0013-00 [I,A]; C22C0013-00 [I,C*]; C22C0014-00 [I,A]; C22C0014-00 [I,C*]; C22C0016-00 [I,A]; C22C0016-00 [I,C*]; C22C0018-00 [I,A]; C22C0018-00 [I,C*]; C22C0021-00 [I,A]; C22C0021-00 [I,C*]; C22C0022-00 [I,A]; C22C0022-00 [I,C*]; C22C0027-00 [I,C*]; C22C0027-02 [I,A]; C22C0027-06 [I,A]; C22C0028-00 [I,A]; C22C0028-00 [I,C*]; C23C0014-34 [I,A]; C23C0014-34 [I,C*]; G11B0007-26 [I,A]; G11B0007-26 [I,C*]
	FTERM	2H111/EA03; 2H111/EA04; 2H111/EA23; 2H111/EA39; 2H111/FA01; 2H111/FB05; 2H111/FB09; 2H111/FB12; 2H111/FB20; 2H111/GA03; 4K018/AA06; 4K018/AA15; 4K018/AA40; 4K018/KA29; 4K029/BB00; 4K029/BC00; 4K029/BC07; 4K029/BD00; 4K029/DC01; 4K029/DC04; 4K029/DC09; 5D121/AA01; 5D121/EE03; 5D121/EE09; 5D121/EE10; 5D121/EE11; 5D121/EE14; 5D121/EE15

AB The target is for manuf. of a phase change optical recording layer in a

memory device by sputtering. The target consists of a matrix phase contg. Sb and Te and phases in which RM alloy particles are dispersed (R = rare earth metal, \*\*\*Mn\*\*\*, Cr, Ti, Zr, Hf, V, Nb, Zn, Al, and/or Sn; M is elements except Sb, Te, and R). The target is manufd. by mixing of powd. RM alloy and powd. material contg. Sb and Te, shaping, and sintering. The target provides the thermally stable recording layer showing no difference from the compn. of the target in high crystn. rate.

ST sputtering target phase change memory device; antimony tellurium matrix ceramic sputtering target; powd alloy dispersed phase sintered target

IT Sintering  
(in manuf. of sputtering target made of phase change material for manuf. of optical memory device)

IT Atomizing (spraying)  
(of alloy; in manuf. of sputtering target made of phase change material for manuf. of optical memory device)

IT Optical memory devices  
Optical recording materials  
Phase change materials  
Sputtering targets  
(sputtering target made of phase change material for manuf. of optical memory device)

IT 12065-30-4  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)  
(for manuf. of sputtering target made of phase change material for manuf. of optical memory device)

IT 681816-76-2 681816-77-3  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(recording layer; sputtering target made of phase change material for manuf. of optical memory device)

IT \*\*\*681816-74-0\*\*\* \*\*\*681816-75-1\*\*\*  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(target; sputtering target made of phase change material for manuf. of optical memory device)

L10 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:200144 CAPLUS <<LOGINID::20061024>>

DN 140:243654

ED Entered STN: 12 Mar 2004

TI Optical information recording medium

IN Ohno, Takashi; Komatsu, Masao; Kubo, Masae; Mizuno, Masaaki; Nobukuni, Natsuko; Horie, Michikazu; Kunitomo, Haruo

PA Mitsubishi Chemical Corporation, Japan

SO Eur. Pat. Appl., 6 pp.  
CODEN: EPXXDW

DT Patent

LA English

IC ICM G11B007-00  
ICS G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1396851	A2	20040310	EP 2003-27479	19980325
	EP 1396851	A3	20040317		
	R: DE, IE				
	EP 867868	A2	19980930	EP 1998-105437	19980325
	EP 867868	A3	19991006		
	EP 867868	B1	20040908		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2004164849	A2	20040610	JP 2004-27814	20040204
PRAI	JP 1997-75531	A	19970327		
	EP 1998-105437	A3	19980325		
	JP 1998-74132	A3	19980323		

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

EP 1396851 ICM G11B007-00  
ICS G11B007-24  
IPCI G11B0007-00 [ICM,7]; G11B0007-24 [ICS,7]  
ECLA G11B007/24; G11B007/243; G11B007/258; G11B007/24S  
EP 867868 IPCI G11B0007-00 [ICM,6]; G11B0007-24 [ICS,6]  
IPCR G11B0007-00 [I,C\*]; G11B0007-0045 [I,A]; G11B0007-005  
[N,A]; G11B0007-0055 [I,A]; G11B0007-006 [I,A];  
G11B0007-007 [N,A]; G11B0007-007 [N,C\*]; G11B0007-125  
[I,A]; G11B0007-125 [I,C\*]; G11B0007-24 [I,A];  
G11B0007-24 [I,C\*]; G11B0007-243 [I,A]; G11B0007-258  
[I,A]  
ECLA G11B007/0045P; G11B007/0055P; G11B007/006;  
G11B007/125C; G11B007/24; G11B007/243; G11B007/258  
JP 2004164849 IPCI G11B0007-24 [ICM,7]  
IPCR G11B0007-24 [I,A]; G11B0007-24 [I,C\*]  
FTERM 5D029/HA06; 5D029/HA07; 5D029/JA01; 5D029/JB18;  
5D029/JB35; 5D029/JB47; 5D029/KC06; 5D029/LA14;  
5D029/LA15; 5D029/LB07; 5D029/LC06; 5D029/MA13;  
5D029/MA14; 5D029/MA17; 5D029/WA02; 5D029/WB11;  
5D029/WB17; 5D029/WC01  
AB Disclosed is an optical information recording medium for recording,  
retrieving and erasing mark length-modulated amorphous marks, which  
comprises a substrate (1), and a lower protective layer (2), a  
phase-change recording layer (3), an upper protective layer (4) and a  
reflective layer (5) having a thickness of 40-300 nm and a vol.  
resistivity of 20-150 n.OMEGA.-m, formed in this sequence on the  
substrate, wherein the phase-change recording layer (3) is a thin film of  
an alloy of Mw(SbzTel-z)1-w ( 0.ltoreq.w.ltoreq.0.2,  
0.5.ltoreq.z.ltoreq.0.9; M = In, Ga, Zn, Sn, Si, Cu, Au, Ag, Pd, Pt, Pb,  
Cr, Co, O, N, S, Se, Ta, Nb, V, Bi, Zr, Ti, \*\*\*Mn\*\*\*, Mo, Rh and rare  
earth elements), and wherein the reflective layer (5) is made of an alloy  
of Al, inclusive of pure Al, having an impurity content of not more than 2  
at. % or an alloy of Au, inclusive of pure Au, having an impurity content  
of not more than 5 at.%. The object of the present invention is to  
provide a phase-change recording medium whereby the margins for the  
recording linear velocity and the writing power are improved to a large  
extent.  
ST optical information recording medium phase change disk rewritable  
IT Erasable optical disks  
(optical information recording medium)  
IT 1314-98-3, Zinc sulfide, uses 7440-22-4, Silver, uses 7440-57-5, Gold,  
uses 7631-86-9, Silica, uses 121946-26-7, Aluminum 99, tantalum 1  
(atomic) 160194-51-4, Aluminum 99.5, tantalum 0.5 (atomic)  
178255-68-0, Silicon zinc oxide sulfide (Si0.1Zn0.4O0.2S0.4) 204707-89-1  
213685-67-7 213685-70-2 \*\*\*213685-72-4\*\*\* 668437-50-1  
668437-51-2  
RL: TEM (Technical or engineered material use); USES (Uses)  
(optical information recording medium)  
L10 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:708690 CAPLUS <<LOGINID::20061024>>  
DN 137:239814  
ED Entered STN: 18 Sep 2002  
TI Phase-change optical recording disk for multi-speed recording or CAV  
recording, and its recording method  
IN Shimofuku, Hikaru; Nakamura, Yuki; Yamada, Katsuyuki  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM B41M005-26  
ICS G11B007-0045; G11B007-125; G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 56  
FAN.CNT 1  
PATENT NO. KIND DATE APPLICATION NO. DATE  
PI JP 2002264515 A2 20020918 JP 2001-69165 20010312  
PRAI JP 2001-69165 20010312

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002204515	ICM	B41M005-26
	ICS	G11B007-0045; G11B007-125; G11B007-24
	IPCI	B41M0005-26 [ICM,7]; G11B0007-0045 [ICS,7]; G11B0007-00 [ICS,7,C*]; G11B0007-125 [ICS,7]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,C*]; B41M0005-26 [I,A]; G11B0007-00 [I,C*]; G11B0007-0045 [I,A]; G11B0007-125 [I,C*]; G11B0007-125 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-243 [I,A]
AB	The optical disk has a recording layer contg. Ge, In, Sb, and Te of at. amt. satisfying Ge.alpha.In.beta.Sb.gamma.Te.delta. (.alpha., .beta., .gamma., .delta. = at. ratio; .alpha. + .beta. + .gamma. + .delta. = 100; .alpha. = 0.1-7; .beta. = 1-9; .gamma. = 61-75; .delta. = 22-30). The recording layer may further contain .gtoreq.1 selected from Ga, Zn, Sn, Si, Pb, Co, Cr, Cu, Ag, Au, Pd, Pt, S, Se, Ta, Nb, V, Bi, Zr, Ti, Al, ***Mn***, Mo, Rh, C, N, and O. Its PWM (pulse-width modulation) recording is carried out while controlling its duty cycle in a pulse train to achieve multi-speed recording and CAV (const. angular velocity) recording. The optical disk shows high performance at high-speed recording and rewriting.	
ST	optical disk antimony tellurium germanium indium alloy; phase change optical disk multispeed recording; CAV recording phase change optical disk; PWM recording phase change optical disk	
IT	Erasable optical disks Optical recording (phase-change optical recording disk contg. Sb-Te-Ge-In alloy recording layer for multi-speed recording or CAV recording)	
IT	7727-37-9, Nitrogen, uses RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses) (additive in Sb-Te-Ge-In alloy recording layer; phase-change optical recording disk contg. Sb-Te-Ge-In alloy recording layer for multi-speed recording or CAV recording)	
IT	7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7439-96-5, ***Manganese***, uses 7439-98-7, Molybdenum, uses 7440-03-1, Niobium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-25-7, Tantalum, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-55-3, Gallium, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses 7440-69-9, Bismuth, uses 7704-34-9, Sulfur, uses 7782-44-7, Oxygen, uses 7782-49-2, Selenium, uses RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses) (additive in Sb-Te-Ge-In alloy recording layer; phase-change optical recording disk contg. Sb-Te-Ge-In alloy recording layer for multi-speed recording or CAV recording)	
IT	459867-03-9 459867-04-0 ***459867-05-1*** ***459867-06-2*** 459867-07-3 459867-08-4 RL: DEV (Device component use); USES (Uses) (recording layer; phase-change optical recording disk contg. Sb-Te-Ge-In alloy recording layer for multi-speed recording or CAV recording)	
IT	***459867-09-5*** RL: TEM (Technical or engineered material use); USES (Uses) (recording layer; phase-change optical recording disk contg. Sb-Te-Ge-In alloy recording layer for multi-speed recording or CAV recording)	
L10	ANSWER 10 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN	
AN	2002:708688 CAPLUS <<LOGINID::20061024>>	
DN	137:255426	
ED	Entered STN: 18 Sep 2002	
TI	Phase-change optical random-access-memory medium	
IN	Shinozuka, Michiaki	
PA	Ricoh Co., Ltd., Japan	
SO	Jpn. Kokai Tokkyo Koho, 4 pp. CODEN: JKXXAF	

DT Patent  
LA Japanese  
IC ICM B41M005-26  
ICS G11B007-24  
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002264512	A2	20020918	JP 2001-66853	20010309
PRAI	JP 2001-66853		20010309		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002264512	ICM	B41M005-26
	ICS	G11B007-24
	IPCI	B41M0005-26 [ICM,7]; G11B0007-24 [ICS,7]
	IPCR	B41M0005-26 [I,C*]; B41M0005-26 [I,A]; G11B0007-24 [I,C*]; G11B0007-24 [I,A]; G11B0007-243 [I,A]

AB The memory medium comprises, successively from the bottom, a lower substrate, a lower protective layer, a recording layer, an upper protective layer, a heat-release layer, a resin layer, a bonding layer, and an upper substrate; wherein the recording layer is made of a substance expressed by GeyAzBw(SbxTel-x)1-w-y-z (A = Zn, Pb, Sn, Mg, \*\*\*Mn\*\*\*; B = Ag, In; x = 0.65-0.80, w = 0.01-0.15, y = 0.01-0.10, z = 0.01-0.10). The memory medium, using an alloy having a similar compn. to that of eutectic Sb-Te compn., shows high storage stability under high-temp. and high-humidity environment.

ST phase change optical RAM disk antimony tellurium alloy; germanium tellurium antimony alloy optical RAM disk

IT Erasable optical disks  
(RAM, phase-change; phase-change optical RAM medium using Te-Sb-Ge based alloy as recording layer)

IT 460089-73-0 \*\*\*460089-75-2\*\*\* \*\*\*460089-76-3\*\*\*  
\*\*\*460089-77-4\*\*\* \*\*\*460089-78-5\*\*\*

RL: DEV (Device component use); USES (Uses)  
(recording layer; phase-change optical RAM medium using Te-Sb-Ge based alloy as recording layer)

=> d his

(FILE 'HOME' ENTERED AT 13:51:41 ON 24 OCT 2006)

FILE 'REGISTRY' ENTERED AT 13:51:54 ON 24 OCT 2006

L1 2437 S SB 58-74/MAC  
L2 5054 S GE 2-10/MAC  
L3 1497 S TE 12-25/MAC  
L4 2643 S TE 10-35/MAC  
L5 310 S L1 AND L2 AND L4  
L6 18 S L5 AND MN/MAC

FILE 'CAPLUS' ENTERED AT 13:54:01 ON 24 OCT 2006

L7 136 S L5  
L8 7 S L6  
L9 12 S L5 AND (MN OR MANGANESE)  
L10 10 S L9 NOT L8

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	56.55	82.32
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-12.75	-12.75

STN INTERNATIONAL LOGOFF AT 13:54:52 ON 24 OCT 2006